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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,756	05/14/2001	Robert C. Gardiner	283_299	8889

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WALL MARJAMA & BILINSKI
Suite 400
101 South Salina Street
Syracuse, NY 13202

EXAMINER	
TRAN, ELLEN C	
ART UNIT	**PAPER NUMBER**
2134	

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/854,756	GARDINER, ROBERT C.	
	Examiner	Art Unit	
	Ellen C. Tran	2134	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,28-38,42-48 and 60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16, 28-38, 42-48, and 60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communication: 15 August 2005 with acknowledgement of an original application filing date of 14 May 2001.

2. Claims 1-16, 28-38, 42-48, and 60, are currently pending in this application. Claims 1, 28, and 42 are independent claims. Claims 17-27, 39-41, and 49-59 were cancelled in previous amendment. Claim 60 is new. Amendment to the claims is accepted.

Response to Arguments

3. Applicant's arguments with respect to 1-16, 28-38, 42-48, and 60 have been considered but they are not persuasive.

In response to applicant's argument beginning on page 11, "The Applicant asserts that the Johnson ('307) reference not only fails to teach or suggest "transmitting an encryption key" and in fact, teaches away from the subject matter of transmitting an encryption key. With respect to transmitting an encryption key, the Johnson reference states "Security is enhanced...if the key used for encryption and decryption is never transmitted" (Column 2, lines 48-50) and further states the "The system should avoid transmitting cryptography keys" (Column 2, Lines 58-59)". The Office disagrees with applicant's argument. The applicant is taking context from the BACKGROUND OF THE INVENTION out of context to form an argument. The '307 patent clearly shows as claimed transmitting communications encryption key, see '307 col. 3, lines 25-67. The session key is used for the encryption and decryption. The session key is a function of the random number that is transmitted between the tag and host. The exchange used to generate the session key and the "method used to generate the session key from the tag

random number must be the same in both the host and tag" is another term for the claimed predetermined format.

In response to applicant's argument beginning on page 11 "With respect to (Column 3, Lines 25-67) of the Johnson ('307) reference, the cited text recites in part "The tag then encrypts the random number ...using a cryptography key and transmits the encrypted random number back to the POS device (Column 3, Lines 34-37). Hence, the tag (portable keying device transmits and encrypted random number and not an "encryption key" as recited within claim 1." The Office disagrees with argument, the reference as a whole should be reviewed to show the specific teaching of transmitting an encryption key. The steps in col. 3, lines 25-67 are one of the authentication methods used and key generation procedures used to generate a session key during a transaction. The reference also shows steps for changing the main cryptography key which, is used for encryption and decryption of transmission during authentication see '307 col. 15, lines 13-61, which describes the commands used to change the DES key.

In response to applicant's argument beginning on page 14, "Claim 12 recites in part "the secure encryption key memory location is a memory location in non-volatile memory" ... The applicant knows of no equivalence between the differing terminology an respectfully requests more support". The Office disagrees with argument, a non-volatile memory and associated memory have the same meaning as further relayed in the reference see '307 col. 6, lines 56-61.

In response to applicant's argument on page 15, "A means to generate a radio signal is not sufficient to constitute a "low power-close proximity RF transceiver". The Office disagrees with argument the references should be review in combination, a close proximity receiver is disclosed in throughout the primary reference '307, which relays "an interrogator, will

continuously scan for a tag within the field", as well as "In order to save power and extend battery life, the communication electronics 102 operate at a low-current sleep mode until an internal programmable timer causes it to wake up ... If a properly modulated signal is present". The '671 reference was used because it shows how an RF receiver system used with RD tags operate and discloses RF modulation techniques, see '671 col. 3, line 45 through col. 4, line 39.

In response to applicant's argument on page 15, "Comparing relative strength of a plurality of signal does not constitute "transmitting an RF signal at a predetermined power level". The Office disagrees with argument the references should be review in combination, a close proximity receiver is disclosed in throughout the primary reference '307, which relays "an interrogator, will continuously scan for a tag within the field", as well as "In order to save power and extend battery life, the communication electronics 102 operate at a low-current sleep mode until an internal programmable timer causes it to wake up ... If a properly modulated signal is present".

In response to applicant's argument on page 15, "The Applicant asserts that control of a signal with respect to its frequency does not constitute transmitting an RF signal at a predetermined power level that is less than or equal to 1mW". The Office disagrees with argument the references should be review in combination, a close proximity receiver is disclosed in throughout the primary reference '307, which relays "an interrogator, will continuously scan for a tag within the field", as well as "In order to save power and extend battery life, the communication electronics 102 operate at a low-current sleep mode until an internal programmable timer causes it to wake up ... If a properly modulated signal is present". The '671

reference was used because it shows how an RF receiver system used with RD tags operate and discloses RF modulation techniques, see '671 col. 3, line 45 through col. 4, line 39.

In response to applicant's argument on page 16, "The Applicant does not understand how the cited references teaches or suggest an "RF signal [that] has an effective range of less than or equal to a meter." The Office disagrees with argument the references should be review in combination, a close proximity receiver is disclosed in throughout the primary reference '307. Close proximity is in a range or less than or equal to a meter.

In response to applicant's argument on page 16, "The Application does not understand how the cited reference teaches or suggest "transmitting an RF signal in a predetermined direction"." The Office disagrees with argument the references should be review in combination, a close proximity receiver is disclosed in throughout the primary reference '307, which relays "an interrogator, will continuously scan for a tag within the field". The field has the same meaning a predetermined direction.

In response to applicant's argument on page 16, "The '671 reference employs a mixer and a backscatter signal, for purposes other than for installing an encryption key". ". The Office disagrees with argument the references should be review in combination. The '307 reference shows installing an encryption key see '307 col. 15, lines 13-61. The '671 reference was used because it shows how an RF receiver system used with RD tags operate and discloses RF modulation techniques, see '671 col. 3, line 45 through col. 4, line 39.

In response to applicant's argument on page 18, "Furthermore, one skilled in the art would not be motivated to combine the subject matter of the '307 and '791 patents which describe differing subject matter. The Office disagrees the motivation to combine the references

was established in the last Office Action, see '791 col. 3, lines 8 et seq.. The tags used in '307 also utilize transceivers and are manufactured in high volume as disclosed in '791.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language

5. **Claims 1, 8, 9, 10, 11, 12, 28, 29, 30, 36, 37, 38, and 42,** are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson, Jr. U.S. Patent No. 6,185,307 (hereinafter '307).

As to independent claim 1, "A portable keying device for installing a data communications encryption key in at least one electronic terminal, the electronic terminal including a secure encryption key memory location for storing at least one data communications encryption key" is taught in '307 col. 3, lines 27-67 {Note, "portable keying device" has the same meaning as "tag", "data communications encryption key" has the same meaning as "session key", and "electronic terminal" has the same meaning as "POS/host combination".

"the device comprising: a memory device for storing the at least one data communications encryption key" is disclosed in '307 col. 4, lines 1-6;

"and a communications unit coupled to the memory device" is taught in '307 col. 2, line 65 through col. 3, line 4;

"the communications unit being operative to transmit the at least one data communications encryption key in a predetermined format to the electronic terminal" is shown in '307 col. 3, lines 25-47 {Note, "predetermined format" has the same meaning as "cryptography techniques known only be the tag and host"}.

As to dependent claim 8, "wherein the at least one data communications encryption key is installed in the electronic terminal in accordance with a predetermined protocol" is disclosed in '307 col. 3, lines 25-47.

As to dependent claim 9, "wherein the predetermined protocol includes: performing a handshaking routine, whereby the keying device and the electronic terminal exchange handshaking messages" is taught in '307 col. 3, lines 25-35;

"transmitting the at least one data communications encryption key from the keying device to the electronic terminal in response to a successful handshaking routine; validating the step of transmitting by re-transmitting the at least one data communications encryption key from the electronic terminal to the keying device, whereby the keying device compares the transmitted data communications encryption key to the re-transmitted data communications encryption key; and storing the at least one data communications encryption key in the secure encryption key memory location in response to a successful step of validating" is shown in '307 col. 3, lines 40-67.

As to dependent claim 10, "wherein the step of validating includes transmitting a test data communications encryption key from the keying device to the electronic terminal" is disclosed in '307 col. 3, lines 40-67.

As to dependent claim 11, "wherein the electronic terminal compares the test data communications encryption key with a currently in-use data communications encryption key stored in the secure encryption key memory location" is taught in '307 col. 3, lines 44-47.

As to dependent claim 12, **"wherein the secure encryption key memory location is a memory location in non-volatile memory"** is shown in '307 col. 6, line 36 through col. 7, line 27 {Note "non-volatile memory" has same meaning as "associated memory"}.

As to dependent claim 16, "wherein the non-volatile memory includes battery-backed RAM" is disclosed in '307 col. 6, line 36 through col. 7, line 27.

As to independent claim 28, A method for installing a data communications encryption key in an electronic terminal, the electronic terminal including a secure encryption key memory location for storing the at least one data communications encryption key, the method comprising: providing a portable keying device, whereby the portable keying device is physically separated from the electronic terminal" is taught in '307 col. 3, lines 27-67;

"performing a handshaking routine, whereby the keying device and the electronic terminal exchange handshaking messages; transmitting an encryption key from the portable keying device to the electronic terminal" is shown in '307 col. 3, lines 25-35;

"and storing the encryption key transmitted from the portable keying device to the electronic terminal in the secure key memory location" is disclosed in '307 col. 3, lines 40-67.

As to dependent claim 29, "wherein the step of performing a handshaking routine includes transmitting an authorization signal from the portable keying device to the electronic terminal" is taught in '307 col. 3, lines 40-67.

As to dependent claim 30, "wherein the portable keying device provides the electronic terminal with a predetermined authorization code during the step of transmitting an authorization signal" is shown in '307 col. 3, lines 25-47.

As to dependent claims 36, 37, 38, these claims are substantially similar to claims 9-12; therefore they are rejected along similar rationale.

As to independent claim 42, this claim is directed to the a portable key installation system of the method of claim 28; therefore it is rejected along similar rationale.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. **Claims 2-7, 31-35, 43-48, and 60** are rejected under 35 U.S.C. 103(a) as being unpatentable over '307 in further view of Nysen U.S. Patent No. 6,433,671 (hereinafter '671).

As to dependent claim 2 the following is not taught in '307: **wherein the communications unit includes a low power-close proximity RF transceiver"** however '671 teaches "It is also an object of the invention to provide a method for interrogating a backscatter generating tag, comprising the steps of (a) generating an interrogation signal having a frequency within a interrogation band; (b) emitting an interrogation signal as a radio wave signal; (interacting the emitted radio wave signal with a backscatter generating tag; (receiving a radio frequency backscatter signal from the tag" in col. 8, lines 53-67.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of '307 a method of providing secure transactions with a tag and POS device to include means for the tag to generate a radio signal. One of ordinary skill in the art would have been motivated to perform such a modification because of the numerous communication methods known for communicating between a tag and an electronic terminal (see '307 col. 1 lines 43 et seq.) "Numerous patent have issued and foreign applications published relating to technolog associated with communicating information between a tag or like transponder and the fuel dispenser. The patents disclose communicating between the tag and fuel dispenser with fiber optics, electromagnetic radiation, such as radio frequency transmissions, infrared, direct electrical connections and various others means or combination of these means".

As to dependent claim 3, "wherein the predetermined format includes transmitting an RF signal at a predetermined power level" is taught in '671 col. 8, lines 53-67 {Note "power level" has the same meaning as "signal strength"}.

As to dependent claim 4, "wherein the predetermined power level is less than or equal to 1mW" is shown in '671 col. 14, lines 1-10 "In one embodiment, the voltage controlled oscillator 10 is controlled to produce a sinusoidal RF".

As to dependent claim 5, "wherein the RF signal has an effective range of less than or equal to a meter" is disclosed in '671 col. 34, line 42 through col. 35, line 13 "The graphs of FIGS. 36 and 37 illustrate the advantages of the DSSS system. The first portion of the curve on FIG. 37 for a distance between 5 and 25 feet shows the usual falloff of signal strength obtained with a system of the prior art without using the spread spectrum signal modulation according to the invention. The curve has been normalized to show a maximum signal strength of 1.0 at 5 feet from the antenna ... Accordingly, it is very easy to discriminate between a desired signal 15 feet from the reader, and an unwanted signal, such as from an adjacent toll lane, which in most cases will be at least 25 feet away ... It is possible to tailor the distances in actual set up very accurately by locating the antenna at the desired distance from the tag even though the transmitter, receiver/detector and decoder are located somewhere else".

As to dependent claim 6, "wherein the predetermined format includes transmitting an RF signal in a predetermined direction" is taught in '671 col. 17 , lines 64-67 "Another transponder system provides separate launch and receiving transducers ... These surface acoustic wave pass beneath the receiving transducer 170 and continue on toward or more reflectors 172 in the direction indicated by the arrow 174".

As to dependent claim 7, "wherein the predetermined format includes transmitting an RF signal having a predetermined polarity" is shown in '671 col. 32, lines 28-53 "When the reference signal is one polarity, the modulated backscatter signal passes directly through he

mixer. When the reference signal is of the opposite polarity, the modulated backscatter signal is inverted".

As to dependent claim 31, "wherein the step of performing a handshaking routine includes transmitting RF signals having at least one predetermined transmission characteristic" disclosed in '671 col. 8, lines 53-67.

As to dependent claims 32, 33, 34,43-48, these claims contain substantially similar subject matter as claims 2-7; therefore they are rejected along similar rationale.

As to dependent claim 35, "wherein the at least one predetermined transmission characteristic includes transmitting an RF signal having a predetermined modulation format that is characterized by a predetennined programming voltage" is taught in '671 col. 14, lines 1-10 "In one embodiment, the voltage controlled oscillator 10 is controlled to produce a sinusoidal RF".

As to dependent claims 43-48, these claims contain substantially similar subject matter as claims 2-7; therefore they are rejected along similar rationale.

As to independent claim 60, "A portable keying device for installing a data communications encryption key in at least one electronic terminal, the electronic terminal including a secure encryption key memory location for storing at least one data communications encryption key" is taught in '307 col. 3, lines 27-67 and '307 col. 15, lines 12-61

"the device comprising: a memory device for storing the at least one data communications encryption key" is disclosed in '307 col. 4, lines 1-6;

"and a communications unit coupled to the memory device, the communications unit being operative to transmit the at least one data communications encryption key to the electronic terminal when said communications unit is configured to operate according to a pre-determined format that includes at least one of: " is taught in '307 col. 3, lines 25-47;

"requiring transmission of an RF signal at a predetermined power level of less than or equal to 1mW" is shown in '671 col. 8, lines 53-67 and '307 col. 7, lines 28-39;

"and/or requiring transmission of an RF signal in a direction that resides within an angular range of plus or minus 15 degrees or less of a predetermined direction" is disclosed in '307 col. 3, lines 27-31 and '671 col. 17, lines 64-67;

"and/or requiring the transmission of an lmW signal having a predetermined polarity" is taught in '671 col. 32, lines 28-53.

8. **Claims 13, 14, 15, and 17,** are rejected under 35 U.S.C. 103(a) as being unpatentable over '307 in further view of Tuttle et al. U.S. Patent No. 6,078,791 (hereinafter '791).

As to dependent claim 13, the following is not taught in '307 **"wherein the non-volatile memory includes E2PROM"** however '791 teaches "This memory includes, but is not limited to , PROMs, EPROMs, EEPROMs, SRAMs, DRAMs, and ferrorelectric memory devices" in col. 2, lines 46-49.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of '307 a method of providing secure transactions with a tag and POS device to include means to utilize various memory devices. One of ordinary skill in the art would have been motivated to perform such a modification because by utilizing various memory

devices the packaging of the portable keying device can be varied to make inexpensive and readily manufactured in high volume products (see '791 col. 2 lines 8 et seq.) "In view of the problems described above and related problems that consequently become apparent to those skilled in the applicable arts, the need remains for enclosed electronic apparatus including transceivers wherein the enclosure is inexpensive, readily manufactured in high volume, appropriate in size for use as a stamp, label, or tag".

As to dependent claim 14, "wherein the non-volatile memory includes EPROM" is taught in '791 col. 2, lines 46-49.

As to dependent claim 15, "wherein the non-volatile memory includes Flash memory" is shown in '791 col. 2, lines 46-49.

As to dependent claim 17, "wherein the non-volatile memory includes Ferro RAM" is disclosed in '791 col. 2, lines 46-49.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen C Tran whose telephone number is (571) 272-3842. The examiner can normally be reached from 6:30 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory A Morse can be reached on (571) 272-3838. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ellen Tran
Patent Examiner
Technology Center 2134
18 October 2005

GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100